

EPIDEMIOLOGICAL SURVEILLANCE OF HEPATITIS B IN CONDITIONS OF INTENSIVE INTERNATIONAL MIGRATION

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Ключевые слова: международные мигранты, гепатит В, оккультный гепатит В, медицинское освидетельствование

Резюме: миграционные процессы в настоящее время играют ключевую роль в изменении эпидемиологии вирусного гепатита В. Показана широкая распространенность маркеров гепатита В, в том числе HBsAg-негативной формы заболевания, среди иностранных граждан, прибывающих в СЗФО. Требуется пристальное внимание к распространенности инфекционных заболеваний в данной социальной группе.

Resume: migration processes currently play a key role in changing the epidemiology of viral hepatitis B. A wide prevalence of hepatitis B markers, including the HBsAg-negative form of the disease, among foreign citizens arriving in the Northwestern Federal District has been shown. Close attention is required to the prevalence of infectious diseases in this social group.

Relevance. The report "On Migration in the World 2020", prepared by the authoritative intergovernmental organization - the International Organization for Migration (IOM, IOM), reports that 2019. The Russian Federation (RF) received about 11.6 million international migrants. A significant proportion are citizens of Ukraine (>3 million people), Kazakhstan (about 2.5 million) and Uzbekistan (1.1 million). The directions Ukraine-RF, Kazakhstan-RF, Uzbekistan-RF, Azerbaijan-RF, Belarus-RF are included in the 20 main migration corridors with the participation of European countries in 2019 [1]. According to the published data of the Federal State Statistics Service (Rosstat), in 2019. international migration in the Russian Federation amounted to 701,234 people, of which 617,997 (88.1%) are from the countries of the Commonwealth of Independent States (CIS), which, in addition to the Russian Federation, includes the Republic of Azerbaijan, the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic, Republic of Moldova, Republic of Tajikistan, Turkmenistan, Republic of Uzbekistan, the Ukraine. The main centers of attraction for migrants are urban settlements (79.2% of arrivals), and not in rural areas.

Labor migrants often come from regions with a higher prevalence of infectious diseases compared to the Russian Federation, work in conditions that increase the risk of their diseases and injuries, and live in conditions that increase the risk of household transmission of infectious diseases. In connection with these features, a correction of the national and international migration policy in the field of healthcare is required [2]. According to the Ministry of Internal Affairs of the Russian Federation, the number of persons in respect of whom a decision was made to acquire Russian citizenship is increasing every year and in 2019. amounted to 497,817, in 2020. – 656 347, 2021 – 735 385. In addition, it must be taken into account that currently feminization of migration flows is observed all over the world, which also affects the ever-increasing contribution to the total birth rate in the Russian Federation [3]. When considering the incorporation of migrants both at the legislative level and in scientific research, first of all, the acquisition of certain cultural

patterns is discussed, but it does not seem possible to integrate, excluding integration into the health care system - access to medical care for migrants on the one hand, and the possibility of control the spread of infections on the other hand.

Analysis of publications on the health of labor migrants from 2000 to 2017 showed that the volume of studies on the health of migrants is extremely low. About half (47.3%) of the relevant documents in the Scopus database are related to health policy and systems, a quarter of the studies are devoted to the mental and psychosocial health of labor migrants, and only the remaining part of the already relatively small number of publications analyzes infectious diseases [2]. The undisputed leader in the number of publications is the United States (40.7%), followed by China and the UK (9.0% and 6.9%), respectively, Russia is among the countries with a low contribution to research in this area [2]. At the same time, the European Association for the Study of the Liver (EASL) in its Hepatitis B Guidelines (2017) highlights vaccination policy and migration processes as the main factors in changing the epidemiology of viral hepatitis B (HBV).

A number of studies conducted in various countries and involving a wide range of donor countries have demonstrated a low level of knowledge about viral hepatitis B (HBV), its prevention, transmission and treatment among migrants [4, 5]. Using regression analysis, a correlation is demonstrated between migration rates, taking into account socio-economic factors, and the detection of dangerous infectious diseases, including parenteral viral hepatitis [6].

Aim: to analyze the prevalence of serological and molecular markers of hepatitis B in the group of foreign citizens undergoing a medical examination for obtaining work permits in the Department of Migration of the Northwestern Federal District, and to assess the need to optimize the algorithm for medical examination of labor migrants in the Russian Federation.

Tasks: 1. To analyze hepatitis B serological markers (HBsAg, anti-HBs IgG, anti-HBcore IgG) in the study group; 2. To analyze molecular markers of hepatitis B (HBV DNA) in the study group; 3. To analyze the literature and regulatory framework in the Russian Federation regarding migration policy in the health sector.

Materials and methods. Testing for the presence of HBV serological markers was carried out by a qualitative method for determining HBsAg, anti-HBs IgG, anti-HBcore IgG (Vector-Best test systems) according to the manufacturer's instructions.

DNA extraction was performed using a set of reagents for RNA/DNA isolation from clinical material "RIBO-prep" (Federal Scientific Research Institute of Ethology, Moscow), according to the manufacturer's instructions. Detection of HBV DNA in blood plasma was carried out using a kit for the qualitative determination of nucleic acids in clinical material by PCR with real-time hybridization-fluorescence detection "AmpliSense® HBV-FL" (FBSI TsNIIIE, Moscow), in accordance with the manufacturer's recommendations. To detect HBV in blood plasma at low viral load, we used the one previously developed at the St. Petersburg Research Institute of Epidemiology and Microbiology named after V. Pasteur, a technique that allows the detection of HBV DNA in biological material at low viral load, based on nested PCR with electrophoretic detection [7].

Results and discussion. When assessing the prevalence of the main diagnostic markers of hepatitis B in a group of foreign citizens undergoing a medical examination for

obtaining work permits in the Department of Migration of the Northwestern Federal District, we showed a wide prevalence of hepatitis B markers. Men and women in the surveyed group are represented in equal proportions (50.2 and 49.8%) in the age range from 18 to 90 years. More than 77% of surveyed citizens belonged to 9 of the 44 countries represented, including Ukraine, Uzbekistan, Kazakhstan, Belarus, Moldova, Armenia, Tajikistan, Azerbaijan, China. More than 75% of all HBsAg+ cases occur in citizens of three countries: Moldova (12.0% within the subgroup), Tajikistan (11.1%), Uzbekistan (6%).

Using immunological methods in the examined group of seropositive patients for all three diagnostic markers of HBV was not detected. The following marker frequencies are shown: HBsAg(+)- 2.4%, anti-HBs(+)- 29.2%, anti-HBcore IgG(+)- 16.4%, presented in the indicated combinations: HBsAg(+) and anti-HBcore IgG(+) - 2.0%, anti-HBs(+) and anti-HBcore IgG(+) - 9.5%.

Using a commercial kit (sensitivity 50 IU/ml), HBV DNA was detected in 1.6% of cases. The method for detecting HBV DNA in biological material at a low viral load based on "nested" PCR, developed at the St. Petersburg Research Institute of Epidemiology and Microbiology. Pasteur" (sensitivity 10 IU/ml) HBV DNA was detected in another 7.3% of cases. Thus, using molecular biological methods, it was possible to detect 8.9% of positive cases. Of these, 6.5% of the samples are HBsAg-negative form of the disease. Earlier studies also discussed the high frequency of detection of hepatitis B markers in labor migrants, which suggests a high probability of HBV importation into the Russian Federation [8].

In the list of infectious diseases that pose a danger to others and are the basis for refusing to issue or revoking a temporary residence permit for foreign citizens and stateless persons, or a residence permit, or a patent, or a work permit in the Russian Federation, as amended and supplemented by: On June 15, 2020, hepatitis B is not included, therefore, there is no control over the detection and treatment in the future after entering the Russian Federation. Taking into account the widespread prevalence of the HBsAg-negative form of the disease, it is necessary to optimize the algorithms for examining migrants, including testing for the presence of hepatitis B markers using modern highly sensitive methods of molecular diagnostics.

Conclusions: planning and implementation of coordinated measures to monitor infectious diseases upon entry into the Russian Federation, ensure response measures to outbreaks of infectious diseases, determine the financial and legal component of the treatment of migrants requires close cooperation between migration management systems, Rosпотребнадзор and the healthcare sector, as well as cross-border cooperation in the field of healthcare using modern information technologies.

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